UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS WACO DIVISION

PARKERVISION, INC.,

Plaintiff

v.

Case No. 6:20-cv-00108-ADA

INTEL CORPORATION,

Defendant

PLAINTIFF PARKERVISION, INC.'S RESPONSE IN OPPOSITION TO
DEFENDANT INTEL CORPORATION'S MOTION TO EXCLUDE OPINIONS
AND TESTIMONY FROM PLAINTIFF'S TECHNICAL EXPERT DR.
MICHAEL STEER

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I. INTRODUCTION

First, in the context of a Daubert motion, Intel seeks to exclude testimony of ParkerVision's expert based on a purported lack of notice to Intel. This is not the proper subject of a Daubert motion and, thus, Intel's argument should be rejected.

Nevertheless, there was no lack of notice. The testimony Intel complains about relates to Dr. Steer's opinions on conception and reduction to practice ("C/RTP"). But Intel has known for more than two years that ParkerVision alleged earlier C/RTP dates (as well as the specific dates) for claim 5 of the '902 Patent, claim 6 of the '725 Patent, and claims 5 and 17 of the '673 Patent. Moreover, ParkerVision produced C/RTP documents at this time and supplemented its production during discovery. At bottom, Intel is now complaining that ParkerVision did not include what is tantamount of an expert report regarding C/RTP in its interrogatories. But if Intel wanted additional details in ParkerVision's interrogatory disclosures related to C/RTP, it should have raised it with ParkerVision and, if necessary, the Court during discovery (and before expert reports), rather than lie in wait and raise it in the context of a Daubert motion less than four months before trial.

Second, Intel asserts that Dr. Steer's methodology for evaluating C/RTP is unsound. As discussed below, there is nothing unsound about his methodology. Intel simply disagrees with how Dr. Steer got to his conclusions. This is the subject of cross-examination at trial; not *Daubert*. Intel is effectively asking the Court to weigh Dr. Steer's opinions supporting an early C/RTP date and determine whether

ParkerVision's Eddie-1 chip embodies the asserted claims. That, however, is an issue for the jury.

Finally, Intel asserts that Dr. Steer's simulations analysis was flawed because he modeled transistors in the accused SMARTi chips as switches. Intel ignores that when Dr. Steer modeled the accused chips using switches, he had a sound basis for doing so: he relied on the testimony of Intel's engineers, Intel's documents, and his independent testing which all demonstrated that it was appropriate to model a transistor as a switch. Once again, this is the subject of cross-examination at trial; not Daubert.

Intel fails to show that Dr. Steer's opinions are unreliable and, thus, the Court should deny Intel's motion.

II. LEGAL STANDARD

An expert witness must be "qualified as an expert by knowledge, skill, experience, training, or education," and the testimony must "help the trier of fact to understand the evidence or to determine a fact in issue[.]" FED. R. EVID. 702(a). The trial judge, in the role of gatekeeper, has the authority to screen expert testimony for compliance with Rule 702 and to regulate and exclude subjects and theories about which an expert may testify. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 589 (1993). Rule 702 requires judges to "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Id.* Under Daubert, expert testimony is admissible only if the proponent demonstrates that: (1) the expert is qualified; (2) the evidence is relevant to the suit; and (3) the evidence is reliable. *See*

Watkins v. Telesmith, Inc., 121 F.3d 984, 988-90 (5th Cir. 1997). Rule 702's requirement that expert testimony "assist the trier of fact to understand the evidence or to determine a fact in issue" is primarily a relevance consideration. Daubert, 509 U.S. at 591.

III. ARGUMENT

A. Dr. Steer's C/RTP Opinions Should Not Be Excluded

1. Intel has notice of ParkerVision's C/RTP theories

Intel complains that it was not provided with notice of ParkerVision's theory.

Not only is Intel wrong, but lack of notice is not the proper subject of a Daubert motion.

Contrary to Intel's assertions, this is not a case like *Elbit Sys. Land & C41 Ltd.*v. Hughes Network Sys., LLC, where an earlier priority date was asserted nine days before fact discovery closed. See 2017 U.S. Dist. LEXIS 94495, at *28 (E.D. Tex. Jun. 20, 2017). On August 27, 2020, ParkerVision disclosed to Intel a priority date of August 21, 1997 for claim 5 of the '902 Patent, claim 6 of the '725 Patent, and claims 5 and 17 of the '673 Patent. Ex. 1 at 7-10 (ParkerVision, Inc.'s Amended Disclosure of Preliminary Infringement Contentions). At the same time, ParkerVision produced documents bearing production numbers PV_011928-PV_011996—documents which Dr. Steer relies on in his rebuttal report—and identified them as evidence of C/RTP for the claimed inventions. Id. at 11. Thus, ParkerVision put Intel on notice of its

early C/RTP theory prior to Intel serving its Preliminary Invalidity Contentions and prior to fact discovery opening.¹

Moreover, contrary to Intel's assertion, Dr. Steer's C/RTP charts did not "disclose[] for the first time, a new ParkerVision theory that a circuit board schematic allegedly from August 1997 . . . supports an August 21, 1997 invention date" Mot. at 5-6 (citing CONF-PV00175452-453). Intel appears to misunderstand what is being shown in the circuit board schematics.

The Eddie-1 chip is mounted on an Eddie-1 circuit board. As Dr. Steer explained in his conception charts, the Eddie-1 circuit board is configurable so that some or all components on the board can be used in different configurations. See, e.g., Ex. 3 at 5 (Steer '902 C/RTP Chart). CONF-PV00175452-453 illustrates the configurable components (resistors/capacitors) on the Eddie-1 circuit board. See generally Ex. 4. For his C/RTP analysis, Dr. Steer relies on a single ended capacitor and a 50 ohm load found on the Eddie-1 board for the energy storage element and load, respectively. The single ended capacitor is shown in PV_011982 and load on the Eddie-1 board is discussed at PV_011982-944 at p. 11 (discussing the RF port being terminated in 50 ohms). See Ex. 5. These documents were produced with ParkerVision's August 27, 2020 Amended Preliminary Infringement Contentions as supporting C/RTP. The schematic shown in PV_011982 is one configuration of the configurable components on the Eddie-1 board of CONF-PV00175452-453, which also

¹ In its Preliminary Invalidity Contentions, Intel acknowledged that it had reviewed ParkerVision's August 27, 2020 Amended Disclosure of Preliminary Infringement Contentions. See Ex. 2 at 1.

illustrates the single-ended capacitor and 50 ohm load. Thus, Intel's assertion that Dr. Steer disclosed a new theory is wrong.

After the August 27, 2020 disclosures, ParkerVision maintained that the claims were entitled to a priority date of August 21, 1997 throughout this case. Intel's expert, Dr. Vivek Subramanian, acknowledged that ParkerVision disclosed an invention date of August 21, 1997 well-before the close of fact discovery. Ex. 6 at ¶ 201 (citing Plaintiff ParkerVision, Inc's Supplemental Responses and Objections to Defendant Intel Corporation's First Set of Interrogatories Nos. 1-6, 9, 11-14, Case No. 6:20-cv-00108-ADA (W.D. Tex. Feb. 2, 2022) at 4-7). Moreover, Intel admits that documents relied on by Dr. Steer evidencing early C/RTP were produced during fact discovery. Mot. at n. 5.

If Intel wanted additional details of C/RTP in ParkerVision's interrogatory responses, Intel should have raised it with ParkerVision and, if necessary, the Court. Intel chose not to do so. Any problems Intel has were strategic decisions of its own making.

Further, Intel tested ParkerVision's early C/RTP theory during fact discovery. Jeff Parker affirmatively represented to Intel that ParkerVision came up with the ideas that resulted in the asserted patents between 1995 and 1999. Ex. 7 at 35:20–25 ("Q. And so to best of your recollection, ParkerVision came up with the ideas that resulted in the asserted patent sometime between 1995 and 1999. Is that fair? Yes. I[t] would be somewhere in that time frame, correct.") Mr. Parker, as ParkerVision's corporate witness, also informed Intel that ParkerVision had produced documents

indicating that ParkerVision had reduced the inventions to practice as early as August 21, 1997. Ex. 8 at 599:18-23. Mr. Parker never refused to answer Intel's questions regarding C/RTP, and Intel never claimed that Mr. Parker was inadequately prepared for his deposition.

Finally, when the opportunity arose for Intel to question Dr. Steer directly about his C/RTP opinions, Intel did not ask Dr. Steer a single question about them—even after knowing for more than two years that ParkerVision was asserting an early C/RTP theory. The reason for this is now clear. Rather than trying to get the information from ParkerVision, Intel chose to remain silent in order to claim a meritless discovery deficiency so that it could attempt to preclude ParkerVision's expert from testifying. This objectively unreasonable position cannot support precluding Dr. Steer from presenting his C/RTP opinions to the jury. Accordingly, the Court should deny Intel's request.

2. Dr. Steer's C/RTP opinions are admissible

Intel's arguments appear to be directed to a purported lack of evidence to support an August 21, 1997 priority date, and not the reliability of Dr. Steer's C/RTP opinions. Intel had the opportunity to move for summary judgment on this issue,² but instead chose to advance its lack of evidence arguments under the guise of a *Daubert* motion. Nevertheless, Intel's arguments fail here because Dr. Steer's opinions are reliable.

² Perdiemco v. Industrack LLC, Case No. 2:15-cv-00727-JRG-RSP, 2016 U.S. Dist. LEXIS 183636, at *6 (E.D. Tex. Nov. 3, 2016).

Intel asserts that Dr. Steer's methodology is unsound because Dr. Steer allegedly (1) failed to provide evidence of use of the claimed technology in a physical product, (2) failed to apply the Court's claim construction for the "storage element" and (3) has not applied a methodology to show the "storage element" claim limitations. Intel is wrong.

First, Dr. Steer presented evidence that the Eddie-1 circuit board schematic (PV_011983) was implemented in an actual physical embodiment. In particular, Dr. Steer states:

As discussed in my Opening Report, ParkerVision's engineering team realized that they could increase a receiver's sensitivity by sampling an RF carrier signal and transferring energy to form a down-converted baseband signal. See Steer Report, ¶ 373. After creating prototypes and conducting tests, ParkerVision soon realized that its technology led to improved RF receiver performance, lower power consumption, reduced size and integration benefits. . . . ParkerVision named its novel RF direct down-conversion technology "Direct-to-Data" or "D2D."

ParkerVision incorporated its energy transfer circuitry into an integrated circuit ("IC"), which was named the Eddie-1. The Eddie-1 is a Gallium Arsenide (GaAs) chip fabricated using Triquint's GaAS FET technology. A layout of the Eddie-1 IC is shown below.

Ex. 3 at 1-2 (citing PV_011983) (emphasis added). Dr. Steer also pointed to a ParkerVision press release discussing actual testing of the Eddie-1 chip. See, e.g., Ex. 3 at 9 (Steer '902 C/RTP Chart) ("ParkerVision announced the testing and high-level performance of its Eddie-1 IC in a press release dated December 10, 1997. See, e.g., PVII00114707-09; PV00290561."). Thus, it is clear that Dr. Steer's opinions are based on the fabricated Eddie-1 chip—an actual physical embodiment. Accordingly, the Court should disregard Intel's incorrect assertion.

Second, Dr. Steer applied the Court's claim construction for the "storage element" terms and provided his reasoning as to why this claim element is met. As Dr. Steer acknowledge in his rebuttal report, "I have reviewed the constructions of the U.S. District Court for the Western District of Texas as well as the constructions agreed to by the parties. I have relied on these constructions in forming my opinions in this case." Ex. 9 at ¶ 104. Thus, Dr. Steer applied the Court's construction when identifying single-ended capacitor C8 of the Eddie-1 as an "energy storage device/module" / "storage module" (collectively, "energy storage elements"). Further, Dr. Steer's opinions provide reliable analysis.

In order to determine whether the single-ended capacitor is a "storage" element, Dr. Steer analyzes frequencies and component values of the Eddie-1 chip:

Using the frequencies provided in the Boeing Report, I determined that the percentage of energy discharged from the

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capacitor (between sampling apertures) is 72.7%. A POSITA would understand that with the 72.7% discharge, the Eddie-1 is an energy transfer system, and stores sampled energy...

f_LO = 130 MHz
f_RF|= 915MHz
T_RF = 1/ f_RF = 1.0993 ns
T_LO = 1/f_LO = 7.692ns
T_ON = T_RF / 2 = 0.54645ns
T_OFF = T_LO - T_ON = 7.1456ns
Energy at end of discharge = exp(-2*T_OFF/tau)
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See, e.g., Ex. 3 at 17; see also id. at 6 ("The circuit board includes capacitors and resistors having the following component values: C3 = C4 = 27 pF, C5 = C6 = 100 pF, C7 = C8 = 220 pF, and $R24 = R25 = 200 \Omega$."); Ex. 10 at 20, 27 (Steer '673 C/RTP

Percentage of energy discharged = [1-exp(-2*T_OFF/tau)) = 0.727 = 72.7%

³ While Dr. Steer relies on the Boeing Report from April 1998 for frequency values, this report uses the Eddie-1 chip/circuit board—the version of the Eddie chip that was available in August 1997. Intel raises an issue with this but it can cross-examine Dr. Steer at trial.

Chart) (referring to "Eddie Test Results' in the Secondary Consideration Section of the Report," which relate to cellular performance parameters). Intel takes issue with this methodology for numerous reasons, all of which are the subject of crossexamination at trial. None of these reasons, however, demonstrate that Dr. Steer's analysis is facially unreliable.

Moreover, in his rebuttal report, Dr. Steer incorporated his discussion of background technologies from his opening report. Ex. 9 at ¶ 28. In his opening report, Dr. Steer explained that "a capacitor is one type of circuit element used to store (accumulate) energy." Ex. 11 at ¶ 90. Dr. Steer thoroughly explained the manner in which capacitors store energy. *Id.* at ¶¶ 91-101. These technological explanations support his conclusions that the Eddie-1 includes the recited energy storage elements in the form of a single-ended capacitor. Further, Dr. Steer explicitly opines that the Eddie-1's capacitor functions as part of an energy transfer system, which transfers non-negligible amounts of energy from an input electromagnetic signal to a low impedance load to form a down-converted signal. *See* Exs. 12–17.

Dr. Steer further identifies the Eddie-1's capacitor acquiring energy during apertures of an energy transfer signal (Ex. 12); discharging stored energy to form a remaining portion of a down-converted signal (Ex. 14); providing a place where significant energy can be stored when the switch is closed (Ex. 14); having energy from a modulated carrier signal directed to it (Ex. 17); discharging a portion of previously accumulated energy to a low impedance load (Ex. 17); and acquiring energy during apertures of a control signal (Ex. 17). These activities are clearly

consistent with "a [element/device/module] of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal." *See* ECF No. 75.

The party offering expert testimony bears the burden of proving by "a preponderance of the evidence that the testimony is reliable." *Moore v. Ashland Chem. Inc.*, 151 F.3d 269, 276 (5th Cir. 1998)." As described, Dr. Steer's opinions clearly rise above this threshold. Further, "whether *Daubert*'s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine." *Kumho Tire*, 526 U.S. 137, 147 (1999). However, the trial court's role as gatekeeper under *Daubert* "is not intended to serve as a replacement for the adversary system. . . . Thus, while exercising its role as a gate-keeper, a trial court must take care not to transform a *Daubert* hearing into a trial on the merits." Dr. Steer's opinions follow the Court's constructions and reliably explain how the Eddie-1 embodies every element of the asserted claims—including the energy storage elements.

The Court's analysis need not extend further to determine whether Dr. Steer sufficiently or credibly makes this showing—as Intel seems to request. The credibility and persuasiveness of expert testimony are matters to be resolved by a jury. Accordingly, the Court should deny Intel's request to exclude Dr. Steer's C/RTP opinions.

B. Dr. Steer's Infringement Opinions Based On His Circuit-Level Simulations Should Not Be Excluded

The asserted claims of the patents-in-suit recite a "switch" / "switching device" / "switching module." The Court construed this term to have its plain-and-ordinary meaning, wherein the plain-and-ordinary meaning is "an electronic device for opening and closing a circuit as dictated by an independent control input." ECF No. 75 at 6. Applying this construction, Dr. Steer analyzed the Accused Products to determine whether they contained "an electronic device for opening and closing a circuit as dictated by an independent control unit." Ultimately, Dr. Steer determined that

[Ex. 11 at ¶ 329.]

[Id. at ¶ 624.4]

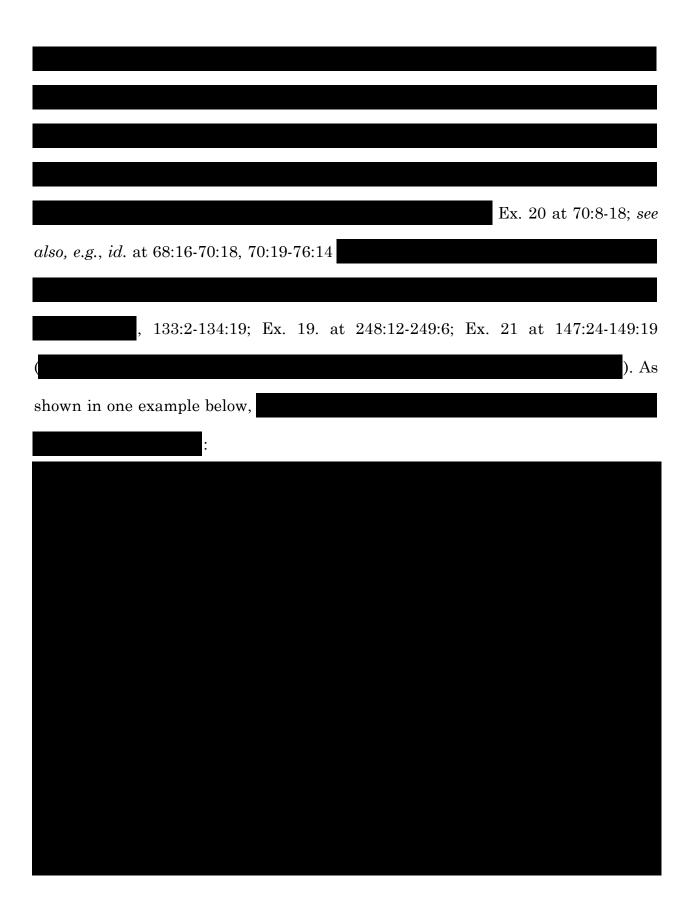
Regarding modeling, generally, Dr. Steer explained:

In order to understand the operation of a circuit, one must view the circuit as a whole and also look at the electrical signals in the circuit. One cannot simply look at individual components of the circuit. This is because the same components (e.g., transistor) used in different

⁴ "A FET is a type of transistor. A FET can amplify, oscillate, or switch the flow of current between two terminals by varying the voltage at a third terminal. In other words, a FET can perform different functions depending on how it is set up." Ex. 11 at ¶ 255. "That FETs have many modes of operation depending on circuit topology and signals is well known." *Id.* at ¶ 275. When a FET is used as a switch, the FET opens and closes. When the FET is ON (closed), current can pass through the FET; when the FET is OFF (opened), current does not pass through the FET. Said another way, a FET used as a switch has two states—either ON (closed) or OFF (opened); allowing all current through or preventing current from flowing." *Id.* at ¶ 276.

circuits can be used in different ways depending on a number of characteristics or parameters that can be varied, such as dimensions and materials, which can affect the operation.

Ex. 11 at ¶ 274. Thus, "[i]t is undisputed that every circuit simulation involves some
level of simplification." Mot. at 19. In this case, "[it was] not possible to simulate an
entire chip at the transistor level so models with the essential characteristics being
investigate[d were] used." Ex. 18 at 4. But, "[i]t should be noted that the switch used
in [Dr. Steer's] models i[s] a practical switch with finite on-resistance and of
resistance." $Id.$ at \P 22.
; and (2) Dr. Steer's independent testing
of the Accused Products' transistors.
Ex. 19 at 138:13-
19.
Ex. 20 at 105:5-13.
Ex. 21 at 157:12-19. Intel's own
technical expert, Dr. Subramanian, admits that "
." Ex. 6 at ¶ 78.
Further, Intel's documents and the statements of its engineers confirm that
. Dr. Klepser testified
for example, "



Ex. 11 at 101 (citing 96102DOC00050662-96102DOC00050679 at 50663); see also id. at $\P\P$ 363-365 (identifying Intel documents).

Dr. Steer could simply	nave reasonably relied intels engineers and documents.
Instead, Dr. Steer also chos	se e
	Ex. 11 at \P 626; see also Ex.
22 at 171:14-17	
	Ex. 18 at pp. 686-783 ("Part X"); see also id. at
Figure X.C.1(a), Figure X.C.	.1(b), Figure X.D.1(a), Figure X.D.1(b), Figure X.E.1(a),
Figure X.E.1(b), Figure X.F	.1(a), Figure X.F.1(b), Figure X.G.1(a), Figure X.G.1(b)
	Ex. 11 at ¶ 345;
see also Ex. 18 at Figure X.C.	.4(a), Figure X.C.8(a), X.C.4(b), X.C.8(b), X.D.4(a), Figure
X.D.8(a), X.D.4(b), X.D.8(b),	X.E.4(a), Figure X.E.8(a), X.E.4(b), X.E.8(b), X.F.4(a),
Figure X.F.8(a), X.F.4(b), X.	F.8(b), X.G.4(a), Figure X.G.3(a), X.G.3(b) (
-	

.5 Based on the foregoing, Dr. Steer had sufficient basis to

Intel may disagree with Dr. Steer's methodology and reasoning, but that does not make Dr. Steer's opinion unreliable. "[T]his is not an inadmissibility issue but an issue for the jury to weigh the competing expert opinions." CloudofChange, LLC v. NCR Corp., Case No. 6:19-cv-00513-ADA, ECF No. 205 at 6 (W.D. Tex. Nov. 9, 2021). "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Daubert, 509 U.S. at 596. Thus, Intel may cross-examine Dr. Steer at trial about any alleged inconsistencies in his circuit-level simulations, but Intel's request to exclude Dr. Steer's infringement opinions should be denied.

IV. CONCLUSION

For the foregoing reasons, the Court should deny Intel's motion.

⁵ See also Ex. 11 at ¶ 628 ("The time period for which the transistors open/close is determined by the LO signal, which is applied at the gate of the transistors. The gate is separate from the input/output (source/drain) of the switch and, thus, the LO signal is an independent control input. Specifically, the LO signal closes transistors during an aperture, which is the pulse width of the control signal (i.e., the length of activation of the switch)."); id. at ¶ 629 ("During a sampling aperture of an LO signal, for example, transistors close (the switch is "ON"), and the transistors conduct current comprised of the RF signal (energy from the RF signal is transferred from an input to an output of the switch). Outside the sampling aperture of the LO signal, transistors open (the switch is "OFF"), blocking the flow of current (blocking energy from the RF signal from passing through the switch).")

Dated: November 15, 2022 Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on November 15, 2022, a true and correct copy of the foregoing

document was forwarded by electronic mail to all counsel of record for Defendant Intel

Corporation.

Dated: November 15, 2022 Respectfully submitted,

/s/ Raymond W. Mort, III

Raymond W. Mort, III